NAV3xx

Precise laser navigation for maximum efficiency

2D LIDAR SENSORS

SICK
Sensor Intelligence.

Technical data overview

Application	Indoor
Integrated application	Navigation
Aperture angle	
Horizontal	360°
Angular resolution	0.125° 1.875° 0.25° 0.375° 0.5° 0.75° 1°
Working range	0.5 m ... 250 m, 0.5 m ... 70 m on reflectors (depending on type)
Scanning range	
At 10% remission	35 m
At 90% remission	100 m ... 120 m (depending on type)
Scanning frequency	5 Hz ... 20 Hz, 8 Hz, ± 5 % (depending on type)
Ambient operating temperature	0 °C ... +50 °C
Ethernet	✓
Serial	✓
Digital outputs	1 (digital)
Weight	2.4 kg

Product description

The 2D LiDAR sensors in the NAV product family provide the highest level of performance for the navigation of automated guided vehicles (AGVs). The unrestricted spatial location of positions is performed using reflector marks and provides the AGV with maximum flexibility by virtually changing the route in the vehicle computer. NAV 2D LiDAR sensors provide highly accurate spatial contour data about distance, angle, and remission, as well as reflector data, at high speed over a scanning path of up to 360 degrees. Multiple measurements made on each reflector are converted into precise reflector coordinates. This information makes it possible to transmit the precise vehicle position to the vehicle computer, even if ambient conditions change. The combination of spatial contour data and reflector data (mixed-mode navigation) enables line-guided vehicles to travel in areas where it is not possible to position reflector marks (automated truck loading or block storage areas, for example).

At a glance

- Mixed-mode navigation provides both spatial contour data and reflector data
- Long scanning range: up to 70 m on reflectors (up to 35 m on black targets)
- High internal computing power and individual AGV configuration
- Measurement, navigation, and determination of position with highest level of precision from three visible reflectors
- Angular resolution of up to 0.1 degrees
- Navigation, spatial and contour data, reflector marks, angular position and/or raw data collection

Your benefits

- Precise, fast collection of spatial contour data and/or simultaneous determination of reflector data (managing up to 12,000 reflectors) in real time
- Integrated evaluation of measured data reduces the computing load in the vehicle computer, minimizing power consumption and reducing operating costs
- High flexibility, since line guidance is also possible in areas without reflector marks, and routes can be easily modified using teach-in mode
- Precise measurements in harsh industrial environments thanks to IP65 housing for indoor applications
- High angular resolution for gap-free scanning even under difficult conditions
- Hardware synchronization output ensures precise control

Fields of application

- Automated guided vehicles, cleaning robots and tow trucks
- Determination of system positions, absolute and relative to each other
- Location determination for mobile systems
- Contour-based navigation for fully automatic truck loading
- Deployment as permanent reference system for line-guided AGVs
- Deep stacking

Ordering information

Other models and accessories ➜ www.sick.com/NAV3xx

- **Enclosure rating:** IP65
- **Color:** Light blue (RAL 5012)
- **Connection type:** 3 x M12 male connector/female connector

Working range	Integrated application	Scanning frequency	Type	Part no.
0.5 m ... 250 m	–	5 Hz ... 20 Hz	NAV310-3211	1060834
0.5 m ... 250 m, 0.5 m ... 70 m on reflectors	–	8 Hz, ± 5 %	NAV340-3232	1060821
	Navigation	8 Hz, ± 5 %	NAV350-3232	1052928

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is "Sensor Intelligence."

WORLDWIDE PRESENCE:

Contacts and other locations –**www.sick.com**

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